

Serial No.: 09/945,482  
Group Art Unit: 2635

Amendments to the Specification:

Please cancel the previous Abstract and add the following new Abstract:

a1  
--A method for preventing data collision includes transmitting a carrier signal of a predetermined frequency from an RFID reader, amplifying the transmitted carrier signal from the RFID reader, determining whether the amplitude of the transmitted carrier signal has been modulated, generating a first gap signal, checking whether a tag responsive to a reader signal exists within a tag read range and reading an initial response of the tag. If the tag exists within the tag read range, checking whether the initial response of the tag read results in data collision. If the initial response does not result in data collision, reading the data stored at a memory of the tag using a predetermined protocol, verifying whether a format of the read data is valid, and generating a second gap signal to indicate that the data transfer is complete if the verified format is valid. The process is then repeated by checking for another card.--

Please replace the section heading immediately following the title with the following rewritten section heading:

--Technical Field of the Invention--

a2 [ Please replace the paragraph at page 1, lines 3-5 with the following rewritten paragraph: ]

--The present ~~invention~~ disclosure relates to a radio frequency identification (RFID) tag system, and more particularly, to an apparatus and a method for preventing data collision.--

Please replace the section heading at page 1, line 7 with the following rewritten section heading:

a3 --Background of the Invention--

Please delete the paragraph at page 1, lines 18-21.

Please replace the paragraph at page 2, lines 1-3 with the following rewritten paragraph:

--FIG. 1 is a block diagram of an RFID tag reader constructed in accordance with the teachings of the present invention; disclosure;

a4 [ Please replace the paragraph at page 2, lines 4-5 with the following rewritten paragraph: ]

--FIG. 2 shows a diagram of an RFID tag constructed in accordance with the teachings of the present invention; disclosure;

[ Please replace the paragraph at page 2, lines 6-9 with the following rewritten paragraph: ]

--FIG. 3 is a transfer timing diagram of a sequential transfer of identification information for each tag to the reader constructed in accordance with the teachings of the present invention; disclosure;

[ Please replace the paragraph at page 2, lines 10-12 with the following rewritten paragraph: ]

--FIG. 4 provides a diagram of transfer period for each tag constructed in accordance with the teachings of the present invention; disclosure; and--

[ Please replace the paragraph at page 2, lines 13-15 with the following rewritten paragraph: ]

--FIG. 5 is a flow chart of a method for preventing data collision constructed in accordance with the teachings of the present invention; disclosure.

Please replace the section heading at page 2, line 17 with the following rewritten section heading:

--Detailed Description of the Preferred Embodiments--

a5 [ Please replace the paragraph at page 2, lines 18-21 with the following rewritten paragraph: ]

Serial No.: 09/945,482  
Group Art Unit: 2635

Q5  
--Hereinafter, preferred devices and methods constructed in accordance with the teachings of the present invention disclosure will be described in detail with reference to the accompanying drawings.--

Please replace the paragraph at page 3, lines 4-10 with the following rewritten paragraph:

Q6  
--In particular, the transferring unit 100 includes a carrier signal generator 102 that generates a carrier signal. The transferring unit 100 also includes a carrier signal amplifier 104 for amplifying the carrier signal from the carrier signal generator 102. The transferring unit 100 further includes a gap signal generator 106 for generating establishing a non-transfer period--

Please replace the paragraph at page 4, lines 1-6 with the following rewritten paragraph:

Q7  
--In an RFID tag system, the reader 10 successively transmits a radio frequency signal, determined by which establishes an electromagnetic field, strength. The strength of the electromagnetic field defining established by the transmitted radio frequency signal defines a tag read range. An RFID tag 20 within the tag read range turns on in response to the electromagnetic field ~~transmitted~~ and transfers data stored in the memory 222 by using a predetermined protocol.--

~~Please replace the paragraph at page 4, lines 7-12 with the following rewritten paragraph:--~~

--FIG. 3 is a transfer timing diagram of the data transmission protocol of the RFID tag ~~systems~~ system shown in FIG. 2. The output data of the RFID comprises include a data transfer period, i.e. data period, and a ~~non-transfer period,~~ non-transfer period, i.e. gap period. The data period has a predetermined uniform length, ~~and no~~ No data were are transmitted for during the gap period.--

~~Please replace the paragraph at page 4, lines 13-15 with the following rewritten paragraph:--~~

Serial No.: 09/945,482  
Group Art Unit: 2635

--The message to be transferred for the data period is ~~[[a]]~~ predetermined data comprising including an information data bit defined in the data protocol and has a uniform data bit length.--

A7 [ Please replace the paragraph at page 4, lines 17-22 with the following rewritten paragraph: ]

--The gap period is ~~generated in~~ established by the timer of the RFID tag system by setting the length ~~information~~ of the gap period. The length of the gap period is longer than the length ~~that of the data period for the purpose of the prevention of the to prevent~~ data collision and ~~the correct data receiving.~~ to ensure the receipt of correct data. In one a preferred embodiment, ~~of the present invention,~~ the gap period is ten times as long as longer ~~than~~ the data period.--

Please replace the paragraph at page 5, lines 1-4 with the following rewritten paragraph:

A8 --The data streams ~~comprising including~~ the data period and the gap period are successively outputted if the RFID tags are within the read range and ~~[[a]]~~ power is supplied ~~from~~ from an antenna and a resonance circuit.--

Please replace the paragraph at page 5, lines 10-14 with the following rewritten paragraph:

--If an RFID tag 20 is within the tag read range, identification information of the RFID tag 20 is successively transferred to the reader 20 in accordance with the transfer timing diagram as shown in FIG. 4, ~~at in~~ which the data transfer occurs during ~~goes along~~ with the ~~non-transfer data~~ period. --

A9 [ Please replace the paragraph at page 5, lines 15-24 with the following rewritten paragraph: ]

--As shown in FIG. 4, ~~variation of~~ varying the non-transfer period ~~results may result~~ in a skew or overlap period with the transfer period for each tag. Even though data collision

Serial No.: 09/945,482  
Group Art Unit: 2635

a9  
~~occurs~~ may occur during a first period T1 and a fourth period T4, the identification information for each tag within the tag read range can be read despite the data collision because the skew period varies as the data transfer period is repeated. During the transfer periods T1 and T4, for example, the identification information for tag 1 and tag 2 ~~cannot can~~ be read ~~because even though~~ a data collision ~~have~~ has occurred.--

Please replace the paragraph at page 6, lines 21-24 with the following rewritten paragraph:

a10  
--At step 310, the card (tag) 20 determines whether the amplitude of the transmitted carrier signal is has been modulated. ~~The modulation~~ Modulation of the amplitude ~~depicts~~ indicates that there is a data transfer exists between the card (tag) 20 and the reader 10.--

Please replace the paragraph beginning at page 7, line 23 and ending at page 8, line 4 with the following rewritten paragraph:

a11  
--At step 360, the format of the read card (tag) data is verified. If the verified format is not valid, step 350 is repeated; and, if the verified format is valid, a second gap signal with a period shorter than that of the first gap signal is generated to ~~notify~~ indicate that the data transfer is complete (step 370). ~~and then the~~ The reader 10 then repeats the steps starting from ~~the~~ step 330 for another card (tag) 20.--

Please replace the paragraph at page 8, lines 5-11 with the following rewritten paragraph:

a12  
--Although certain methods and ~~apparatus~~ apparatuses constructed in accordance with the teachings of the ~~invention~~ disclosure have been described herein, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all embodiments of the teachings of the ~~invention~~ disclosure fairly falling with the scope of the ~~appended~~ claims, either literally or under the doctrine of equivalents.